

- I.      Collect Drainage Data
  - Aerial photos
  - Existing plans
  - Survey
  - DTM (Data Terrain Model)(If available)
  - City plats
  - Archive history of project area
  
- II      Prepare Drainage Sketch (Existing Conditions & Drainage Patterns)**
  - Details of existing drainage structures
  - Locate adjacent buildings and structures
  - Drainage ditches
  - Sanitary sewers and water lines
  - Other items related to drainage
  
- III.    Prepare Drainage Plan
  - Proposed gradeline, curb widening, office location alignment, etc.
  - Locate proposed inlets, valley gutters, storm drain trunk lines, alternates
  - Delineate drainage areas to each inlet and catch basin
  
- I.      Compute Discharge to Each Inlet
  - Select appropriate frequency (urban program maps)
  - Measure drainage areas in acres (A)
  - Determine land use coefficients for each area - consider future development (C)
  - Compute times of concentration ( $T_c$ )
  - Determine intensity (I)
  - Compute discharge to each inlet (Q)
  
- V.      Pinpoint Areas of Existing or Potential Drainage Problems
  - Refer to drainage history and district & city engineers
  - List of questions
  
- VI.    Field Inspection
  - Verify drainage splits and areas
    - Observe particular areas of interest, erosion, cattails, high water marks, etc.
    - Take ground photos
  
- VII.   Finalize Drainage Plan - Make Recommendations
  - Revise plan, as deemed appropriate by field inspection data
  - Size storm drain

- Prepare recommendation report sheet - specify inlet types, manholes, trunk and lead line sizes with minimum slopes and outlet velocities
- Plot hydraulic gradeline of design storm drain

VIII. Resolve Problems with City Over Alternates, Sizing of Trunk Line, Cost Participation, **Agreements, Etc.**

- Meetings with city, water resource districts, district personnel
- Policy for cost sharing